

Claims

1. A method for run-length encoding of a data stream,
the data stream comprising bitmap formatted subtitle
5 or menu data for video application, wherein a
preferred color is defined, and the subtitle or menu
data are displayed as a separate layer, overlaying
other displayed data, and wherein
 - the shortest type of code words is used for single
10 pixels having individual color values, the color
not being the preferred color;
 - the second shortest type of code words is used for
shorter sequences of pixels of the preferred
color;
 - the third shortest type of code words is used for
longer sequences of pixels of the preferred color,
wherein the sequence length may exceed the width
of the video display, and shorter sequences of
pixels of other color; and
 - the fourth shortest type of code words is used for
longer sequences of pixels of individual color,
wherein the sequence length may exceed the width
of the video display.
- 25 2. Method according to claim 1, wherein the preferred
color is transparent.
- 30 3. Method according to any of the previous claims,
wherein redundant code words are used to code
information not referring to pixels of the subtitle
layer.

4. Method according to any of the previous claims, wherein the shortest redundant code word is used for line synchronization.
5. Method according to any of the previous claims, wherein the shortest type of code words is one byte long, the shorter sequences have lengths up to 63 and the longer sequences have lengths up to 16383.
10. Method according to any of the previous claims, wherein the encoded data stream is distributed over multiple transport packets, and wherein transport packets containing specified parts of the encoded data stream carry indication flags.
15. An apparatus for run-length encoding of a data stream, the data stream comprising bitmap formatted subtitle or menu data for video application, wherein a preferred color is defined, comprising
 - means for encoding single pixels having individual color other than the preferred color, using the shortest type of code words;
 - means for encoding shorter sequences of pixels of the preferred color, using the second shortest type of code words;
 - means for encoding longer sequences of pixels of the preferred color, wherein the sequence length may exceed the width of the video display, and shorter sequences of pixels of equal color other than the preferred color, using the third shortest type of code words; and
 - means for encoding longer sequences of pixels of equal color other than the preferred color,
20. An apparatus for run-length encoding of a data stream, the data stream comprising bitmap formatted subtitle or menu data for video application, wherein a preferred color is defined, comprising
 - means for encoding single pixels having individual color other than the preferred color, using the shortest type of code words;
 - means for encoding shorter sequences of pixels of the preferred color, using the second shortest type of code words;
 - means for encoding longer sequences of pixels of the preferred color, wherein the sequence length may exceed the width of the video display, and shorter sequences of pixels of equal color other than the preferred color, using the third shortest type of code words; and
 - means for encoding longer sequences of pixels of equal color other than the preferred color,
25. An apparatus for run-length encoding of a data stream, the data stream comprising bitmap formatted subtitle or menu data for video application, wherein a preferred color is defined, comprising
 - means for encoding single pixels having individual color other than the preferred color, using the shortest type of code words;
 - means for encoding shorter sequences of pixels of the preferred color, using the second shortest type of code words;
 - means for encoding longer sequences of pixels of the preferred color, wherein the sequence length may exceed the width of the video display, and shorter sequences of pixels of equal color other than the preferred color, using the third shortest type of code words; and
 - means for encoding longer sequences of pixels of equal color other than the preferred color,
30. An apparatus for run-length encoding of a data stream, the data stream comprising bitmap formatted subtitle or menu data for video application, wherein a preferred color is defined, comprising
 - means for encoding single pixels having individual color other than the preferred color, using the shortest type of code words;
 - means for encoding shorter sequences of pixels of the preferred color, using the second shortest type of code words;
 - means for encoding longer sequences of pixels of the preferred color, wherein the sequence length may exceed the width of the video display, and shorter sequences of pixels of equal color other than the preferred color, using the third shortest type of code words; and
 - means for encoding longer sequences of pixels of equal color other than the preferred color,

wherein the sequence length may exceed the width of the video display, using the fourth shortest type of code words.

- 5 8. An apparatus for run-length decoding of an encoded data stream containing compressed bitmap formatted subtitle or menu data for video application, wherein a preferred color is defined, comprising
- 10 - means for decoding single pixels having individual color other than the preferred color, using the shortest type of code words;
- 15 - means for decoding shorter sequences of pixels of the preferred color, using the second shortest type of code words;
- 20 - means for decoding longer sequences of pixels of the preferred color, wherein the sequence length may exceed the width of the video display, and shorter sequences of pixels of equal color other than the preferred color, using the third shortest type of code words; and
- 25 - means for decoding longer sequences of pixels of equal color other than the preferred color, wherein the sequence length may exceed the width of the video display, using the fourth shortest type of code words.
9. Apparatus according to claim 7 or 8, wherein the preferred color is transparent.
- 30 10. Apparatus according to any of claims 7-9, further comprising means for encoding or decoding code words that are used to transmit information not referring

to pixels of the subtitle layer.

11. Apparatus according to any of claims 7-10,
wherein said encoded data stream is distributed to
multiple transport packets, and wherein transport
packets containing specified parts of the encoded
data stream carry indication flags.
5